

REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the amendments presented herein and the following remarks, are respectfully requested.

Prior to this Amendment, claims 1-13, 15 and 18-33 were pending. By this Amendment, claims 1-5, 10-13, 15, 20-21 and 24 are canceled without prejudice or disclaimer of the subject matter contained therein. Claims 6, 7, 18-19, 22-23 and 33 are amended. Claims 8-9 and 25-32 remain unchanged. Claims 34 and 35 are newly added. Accordingly, after entry of this Amendment, claims 6-9, 18-19, 22-23 and 25-35 will remain pending.

In the Office Action, claims 22 and 23 were objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Also, in the pending Office Action, claims 1 and 4 were rejected under 35 U.S.C. 102(e) as being anticipated by Toyoda (JP 11-185282; hereafter "Toyoda"). Claims 10 and 11 were rejected under 35 U.S.C. 102(e) as being anticipated by Shih et al. (US 6,211,511; hereafter "Shih"). Claims 18 and 19 were rejected under 35 U.S.C. 102(e) as being anticipated by Kouno (US 6,404,709; hereafter "Kouno"). Claims 21 and 25-26 were rejected under 35 U.S.C. 102(e) as being anticipated by Kitamura et al. (US 5,986,996; hereafter "Kitamura").

Further, in the pending Office Action, claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Katsuma (US 6,094,308; hereinafter "Katsuma"). Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Katsuma in further view of Shiono et al. (US 6,414,930; hereinafter "Shiono"). Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Nakajima et al. (US 5,541,909; hereinafter "Nakajima"). Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi et al. (US 6,507,009; hereinafter "Ohnishi"). Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Katsuma. Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Katsuma in further view of Shiono. Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Ohyama (US 6,366,548; hereinafter "Ohyama"). Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Shih in view of Komma et al. (US 5,687,153; hereinafter "Komma"). Claims 13 and 15 were

rejected under 35 U.S.C. 103(a) as being unpatentable over Shih in view of Kubo (US 5,684,762; hereinafter "Kubo") in further view of Oohchida et al. (US 6,584,060; hereinafter "Oohchida"). Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kouno in view of Nakajima. Claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura in view of Hoshino et al. (US 5,243,585; hereinafter "Hoshino"). Claim 33 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kouno in view of Toyoda.

Applicants respectfully traverse the rejections and objection for the reason presented below.

I. Specification

The disclosure was objected to because of an informality. The Examiner suggested replacing "FIG. 2B." on line 8 of page 18 of the specification with --FIG. 4B--. Applicants have amended the specification according to the Examiner's suggestion. As a result, Applicants respectfully request that the objection be withdrawn.

II. Claim Objection

In the Office Action, claims 22 and 23 were objected to, under 37 C. F. R. 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claims 22 and 23 have been amended to place them in independent form. In so doing, the Applicants respectfully submit that the Examiner's rejection has been rendered moot.

III. Rejections under 35 U.S.C. 102

In the Office Action, claims 1 and 4 were rejected under 35 U.S.C. 102(e) as being anticipated by Toyoda and claims 10 and 11 were rejected under 35 U.S.C. 102(e) as being anticipated by Shih. Claims 1, 4 and 10-11 have been canceled. Thus, these rejections are rendered moot.

In the Office Action, claims 18 and 19 were rejected under 35 U.S.C. 102(e) as being anticipated by Kouno. Applicants respectfully disagree with the rejection and, therefore, respectfully traverse same.

Kouno shows that the light beam from the LD2 is reflected by grating surface 15b of reflecting surface 16 and dichroic mirror 13 and rides on the axis of the object lens (Fig. 1). Thus, Kouno fails to teach or suggest the limitation “the objective lens, the first light source and the second light source are disposed such that the optical axis of the beam of light of a shorter wavelength of said first light source coincides with the optical axis of said objective lens, and the optical axis of the beams of light of a longer wavelength of said second light source is slanted from the optical axis of said objective lens” recited in claim 18. Since Kouno fails to disclose each and every limitation of claim 18, it cannot anticipate claim 18. Claim 19 depends on claim 18 and recites further limitations. Thus, the rejection should respectfully be withdrawn at least because Kouno fails to disclose all the limitations of claims 18 and 19.

In the Office Action, claims 21 and 25-26 were rejected under 35 U.S.C. 102(e) as being anticipated by Kitamura. Claim 21 has been canceled, therefore, the rejection with respect to this claim is moot. Applicants respectfully disagree with the rejection of claims 25-26 and, therefore, respectfully traverse same.

The Office Action states: “In regard to claim 25, Kitamura discloses that the distance between the first and second light sources and said hologram is in the range from 20 to 40 times the distance between the first and second light sources. By using Fig. 17 as a reference for the distance between the first and second light sources in Fig. 16, the distance between the first and second light sources and said hologram appears to be in the range from 20 to 40 times the distance between the first and second light sources.” (Page 7, lines 12-17 in the Office Action).

However, Figs. 16 and 17 of Kitamura do not show a specific range from 20 to 40 times the distance between the first and second light sources. Moreover, Kitamura does not state that the drawings of Figs. 16 and 17 are drawn to scale. Accordingly, it is improper to rely on the scale of the drawings in Fig. 16 and 17 to fashion a rejection of claim 25 or claim 26 (See M.P.E.P. 2125). Thus, Kitamura fails to teach or suggest the limitation “if the distance between said first light source and said second light source is δ , the distance between said first and second light sources and said hologram is in the range from 20δ to 40δ ” recited in claim 25 and, therefore, cannot anticipate claim 25. Claim 26 depends on claim 25 and recites further limitations. Thus, the rejection should respectfully be withdrawn at least because Kitamura fails to disclose all the limitations of claims 25 and 26.

IV. Rejections under 35 U.S.C. 103

In the Office Action, claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Katsuma. Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Katsuma in further view of Shiono. Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Nakajima. Claims 2, 3 and 5 have been canceled, without prejudice or disclaimer of the subject matter contained therein. Thus, these rejections are moot.

In the Office Action, claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi. Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Katsuma. Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Katsuma in further view of Shiono. Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi in further view of Ohyama. Applicants respectfully disagree with these rejections and, therefore, respectfully traverse same.

Toyoda discloses a diffraction grating (Fig. 2, element 22) that is placed on an optical path between a semiconductor laser component 21b and a beam splitter 23 and on an optical path between another semiconductor laser component 21a and the beam splitter 23. Toyoda discloses that the diffraction grating 22 is constituted and acts as a diffraction grating to the light from one semiconductor laser component 21a by forming grid 22b in the whole surface of substrate 22a and that the light from semiconductor laser component 21b of another side may be made to penetrate as it is and a phase may be set to 2π to a desirable for example, light with short wavelength (650 nm light) (page 4, lines 17-21). Toyoda does not discuss, among other things, a diffraction grating having first and second surfaces, the first surface of the diffraction grating which has a first-order diffraction efficiency of almost zero for the light beam forwarded from a first light source and emits the first-order diffraction light for the light beam forwarded from the second light source and the second surface of the diffraction grating which is designated to realize a differential push-pull method of sensing a tracking error sense signal.

Ohnishi discloses a diffraction grating 2 in Fig. 9 and two different gratings 2a, 2b in Fig. 10. Ohnishi, therefore does not cure the deficiency noted with respect to Toyoda. Specifically, Ohnishi also does not discuss a diffraction grating having first and second surfaces, the first surface of the diffraction grating which has a first-order diffraction

efficiency of almost zero for the light beam forwarded from a first light source and emits the first-order diffraction light for the light beam forwarded from the second light source and the second surface of the diffraction grating which is designated to realize a differential push-pull method of sensing a tracking error sense signal.

Thus, the combination of Toyoda and Ohnishi fails to teach or suggest, among other features, the combined limitations of “the first surface of the diffraction grating which has a first-order diffraction efficiency of almost zero for the light beam forwarded from said first light source and emits the first-order diffraction light for the light beam forwarded from said second light source” and “the second surface of the diffraction grating which is designated to realize a differential push-pull method of sensing a tracking error sense signal” recited in claim 6. Accordingly, the combination of these two references cannot render obvious claim 6. Claim 7-9 depend on claim 6 and recite further limitations. Thus, the rejection should respectfully be withdrawn at least because the combination of Toyoda and Ohnishi fails to teach or suggest all the limitations of claims 6-9.

In the Office Action, claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Shih in view of Komma. Claims 13 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shih in view of Kubo in further view of Oohchida. Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kouno in view of Nakajima. Claims 12, 13, 15 and 20 have been canceled, without prejudice or disclaimer of the subject matter contained therein. Thus, the rejections with respect to these claims have been rendered moot.

In the Office Action, claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura in view of Hoshino. Claim 24 has been canceled, without prejudice or disclaimer of the subject matter contained therein. Thus, the rejection is moot.

In the Office Action, claim 33 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kouno in view of Toyoda. Applicants respectfully disagree with the rejection and, therefore, respectfully traverse same.

Kouno discloses a grating surface 15a which is provided on the plane of incidence 15 for the second semiconductor laser LD2 (Fig. 1, column 5, lines 15-16). Kouno discloses that the grating surface 15a is used for what is called a 3-beam method whereby a center main beam and two sub beams on both sides thereof are generated, three light spots are formed on the optical disc, and intensities of the light returned therefrom are detected, thereby generating a tracking error signal. A reflection preventing film is formed on the inside surface

of the plane of incidence 15 for the second semiconductor laser LD2 (column 5, lines 18-25). Kouno does not discuss, among other things, a diffraction grating, one surface of which produces almost 100% of the 0-order diffraction light for the light beam forwarded from the first light source and has a first-order diffraction efficiency of almost zero and emits the 0-order and first-order diffraction light for the light beam forwarded from the second light source, and the other surface of which is designed to realize a differential push-pull method of sensing a tracking error sense signal.

Toyoda discloses a diffraction grating (Fig. 2, element 22) that is placed on an optical path between a semiconductor laser component 21b and a beam splitter 23 and on an optical path between another semiconductor laser component 21a and the beam splitter 23. Toyoda discloses that the diffraction grating 22 is constituted and acts as a diffraction grating to the light from one semiconductor laser component 21a by forming grid 22b in the whole surface of substrate 22a and that the light from semiconductor laser component 21b of another side may be made to penetrate as it is and a phase may be set to 2π to a desirable for example, light with short wavelength (650 nm light) (page 4, lines 17-21). Toyoda discloses that a light beam with a wavelength of 780 nm focuses to the signal recording surface of an optical disk D1 through an objective lens 24, after being divided into a main beam and two side beams by the phase diffraction grating 22 (page 4, line 5 to page 5, line 2). Toyoda also does not discuss, among other features, a diffraction grating, one surface of which produces almost 100% of the 0-order diffraction light for the light beam forwarded from the first light source and has a first-order diffraction efficiency of almost zero and emits the 0-order and first-order diffraction light for the light beam forwarded from the second light source, and the other surface of which is designed to realize a differential push-pull method of sensing a tracking error sense signal.

Thus, the combination of Kouno and Toyoda fails to teach or suggest a combination including, for example, the limitation “a diffraction grating which is placed on the optical path between said first light source and the hologram and on the optical path between said second light source and the hologram, one surface of which produces almost 100% of the 0-order diffraction light for the light beam forwarded from said first light source and has a first-order diffraction efficiency of almost zero and emits the 0-order and first-order diffraction light for the light beam forwarded from said second light source, and the other surface of which is designed to realize a differential push-pull method of sensing a tracking error sense signal” recited in claim 33.

Thus, the references cannot render claim 33 obvious and the rejection should respectfully be withdrawn.

V. Conclusion

In view of the foregoing, Applicants respectfully submit that the Examiner reconsider the rejections and objections, withdraw the rejections and objections, and pass this application quickly to issue.

If there are any fees due for entry of this submission that are not otherwise accounted for, Applicants ask that any such fees be charged to our Deposit Account No. 03-3975, with reference to Order No. 008312/0271598.

Respectfully submitted,

PILLSBURY WINTHROP LLP

A handwritten signature in black ink, appearing to read "Jeffrey D. Karceski", is written over a large, loopy oval shape.

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